

ABSTRACT

In general, in a first aspect, the invention features a method for determining the location of an alignment mark on a stage, which includes directing a measurement beam along a path between an interferometer and a mirror, wherein at least the interferometer or the mirror is
5 mounted on the stage, combining the measurement beam with another beam to produce an output beam comprising information about the location of the stage, measuring from the output beam a location, x_1 , of the stage along a first measurement axis, measuring a location, x_2 , of the stage along a second measurement axis substantially parallel to the first measurement axis, calculating a correction term, ψ_3 , from predetermined information characterizing surface variations of the
10 mirror for different spatial frequencies, wherein contributions to the correction term from different spatial frequencies are weighted differently, and determining a location of the alignment mark along a third axis parallel to the first measurement axis based on x_1 , x_2 , and the correction term.